

PROJECT DESCRIPTION

GENERAL

THIS PROJECT INVOLVES THE MODIFICATION OF THE EXISTING TRAFFIC CONTROL SIGNAL AT THE INTERSECTION OF MD 3 BUSINESS (CRAIN HIGHWAY) AND MD 648E (BALTIMORE ANNAPOLIS BOULEVARD) IN ANNE ARUNDEL COUNTY, MARYLAND. MODIFICATIONS INCLUDE THE INSTALLATION OF 16 INCH LED COUNTDOWN PEDESTRIAN SIGNAL HEADS AND AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTONS FOR THE NORTH AND SOUTH LEGS OF MD 3 BUSINESS AND THE EAST AND WEST LEGS OF MD 648E. MD 3 BUSINESS IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION.

INTERSECTION OPERATION

THE INTERSECTION WILL CONTINUE TO OPERATE IN A NEMA EIGHT-PHASE, FULL-TRAFFIC-ACTUATED MODE WITH THE MD 3 BUSINESS APPROACHES OPERATING CONCURRENTLY AND THE MD 648E APPROACHES OPERATING CONCURRENTLY. EXCLUSIVE/PERMISSIVE LEFT-TURN PHASING IS PROVIDED FOR NORTHBOUND AND SOUTHBOUND MD 3 BUSINESS AND EASTBOUND AND WESTBOUND MD 648E. A PRE-EMPTION PHASE IS PROVIDED FOR NORTHBOUND MD 3 BUSINESS. NEW AUDIBLE PUSHBUTTON ACTUATED PEDESTRIAN PHASES WILL BE PROVIDED ACROSS THE NORTH AND SOUTH LEGS OF MD 3 BUSINESS AND THE EAST AND WEST LEGS OF MD 648E.

APS MESSAGE FOR CROSSING MD 3 BUSINESS (CRAIN HIGHWAY):

- A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT WILL ANNOUNCE "WAIT TO CROSS CRAIN AT BALTIMORE ANNAPOLIS, WAIT".
- B. WHEN WALK PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

APS MESSAGE FOR CROSSING MD 648E (BALTIMORE ANNAPOLIS BOULEVARD):

- A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT WILL ANNOUNCE "WAIT TO CROSS BALTIMORE ANNAPOLIS AT CRAIN, WAIT".
- B. WHEN WALK PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

CONTROLLER REQUIREMENTS

THE EXISTING NEMA SIZE '6' BASE MOUNTED CABINET AND EIGHT-PHASE CONTROLLER AND ALL ASSOCIATED EQUIPMENT WILL CONTINUE TO BE USED. A 2-WIRE CENTRAL CONTROL UNIT WILL BE ADDED TO THE CABINET.

EQUIPMENT LIST "A"

A. EQUIPMENT TO BE SUPPLIED BY SHA:

| ITEM NO. | QUANTITY | UNIT | DESCRIPTION |
|--|----------|------|--|
| 9570 | 8 | SF | [UPDATED] SHEET ALUMINUM GROUND MOUNTED SIGN |
| - 4 EACH R10-3(1) (9"x15") "CRAIN HIGHWAY" | | | |
| - 4 EACH R10-3(1) (9"x15") "BALTIMORE ANNAPOLIS BOULEVARD" | | | |

PROJECT CONTACTS

THE CONTACT PERSONS FOR SHA ARE AS FOLLOWS:

MS. KIMBERLY TRAN
ASSISTANT DISTRICT ENGINEER - TRAFFIC
PHONE: (410) 841-1019

MR. JOSEPH GECKLE
ASSISTANT DISTRICT ENGINEER - MAINTENANCE
PHONE: (410) 841-1013

MR. ED RODENHIZER
CHIEF, SIGNAL SHOP SECTION
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MR. MIKE STOCKER
SUPPLY OFFICE IV (SIGNAL SHOP WAREHOUSE)
PHONE: (410) 787-7696

MR. MIKE HUBER
DISTRICT UTILITY ENGINEER
PHONE: (410) 841-1039

MS. CORREN JOHNSON
CHIEF, TRAFFIC OPERATIONS DIVISION
PHONE: (410) 787-7630

MR. EUGENE BAILEY
CHIEF, SIGN OPERATIONS SECTION
PHONE: (410) 787-7670

EQUIPMENT LIST "B"

B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR

| ITEM NO. | QUANTITY | UNIT | DESCRIPTION |
|----------|----------|------|--|
| 2002 | 4 | CY | TEST PIT EXCAVATION |
| 5005 | 1650 | LF | 12 INCH WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS |
| 8001 | 8 | EA | FURNISH AND INSTALL AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON STATION AND SIGN |
| 8002 | 8 | EA | FURNISH AND INSTALL BREAKAWAY PEDESTAL POLE - ANY SIZE |
| 8003 | 8 | EA | FURNISH & INSTALL LED 16 INCH COUNTDOWN PEDESTRIAN SIGNAL HEADS |
| 8005 | 1 | EA | REMOVE AND DISPOSE PER ASSIGNMENT |
| 8008 | 150 | LF | FURNISH AND INSTALL UP TO 4 INCH SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED |
| 8012 | 150 | LF | No. 6 AWG STRANDED BARE COPPER GROUND WIRE |
| 8015 | 1 | EA | INSTALL EXISTING GROUND MOUNTED SIGN |
| 8016 | 34 | SF | RELOCATE EXISTING GROUND MOUNTED SIGN |
| 8020 | 1250 | LF | ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG) |
| 8021 | 1300 | LF | ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG) |

EQUIPMENT LIST "C"

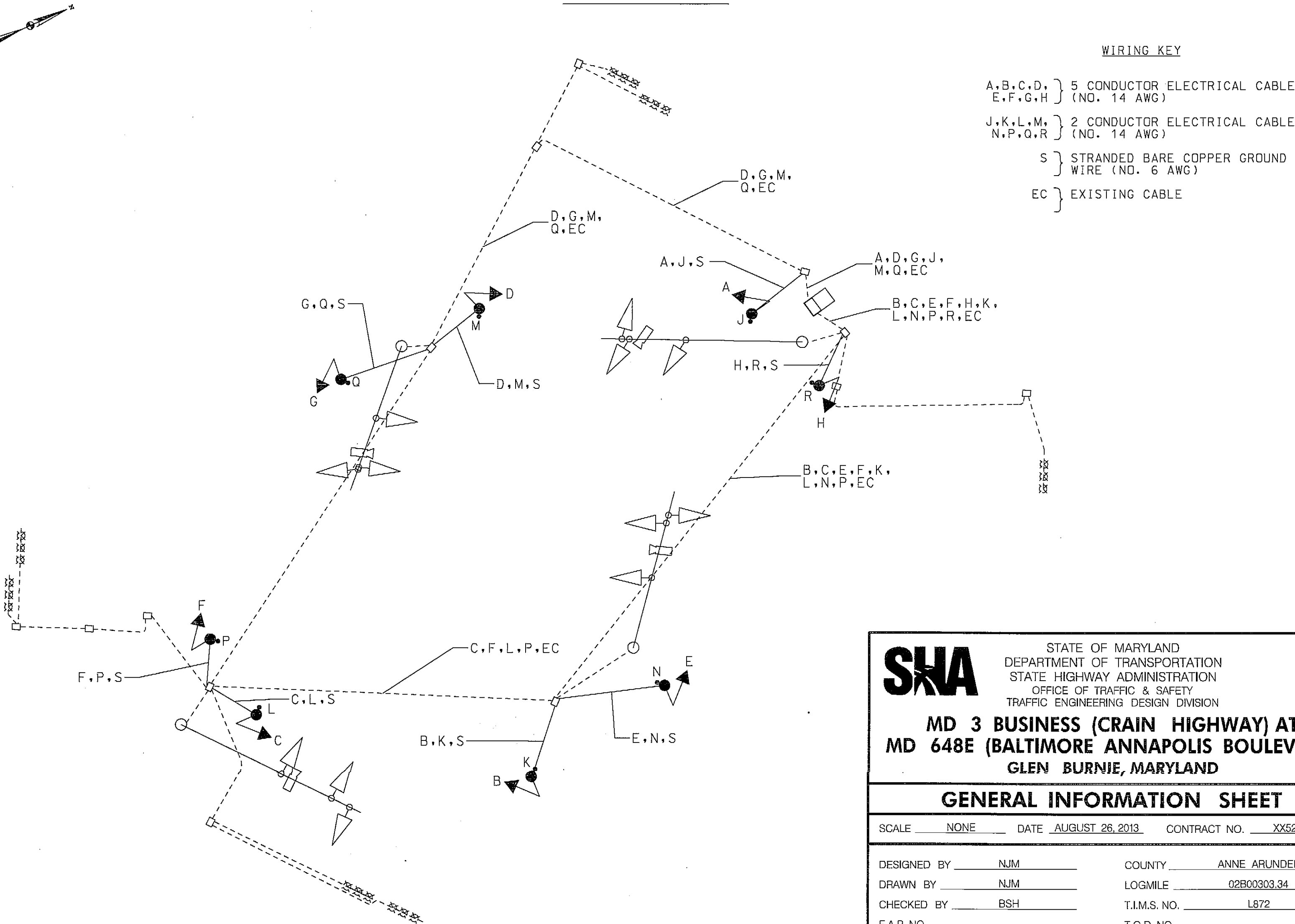
C. EQUIPMENT TO BE REMOVED AND RETURNED TO SHA:

NONE.

PHASE CHART

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|--------------------|--|-------|------|-------|-------|------|-------|-------|------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHASE 1 + 5 | +G-/R | +G-/R | R | +G-/R | +G-/R | R | R | R | R | R | R | R | DW | DW | DW | DW | DW | DW | DW | DW |
| 1 + 5 CHANGE | 1 + 5 MAY CHANGE TO PHASE 1 + 6, PHASE 2 + 5, OR PHASE 2 + 6 | | | | | | | | | | | | | | | | | | | |
| PHASE 1 + 6 | +G-/G | +G-/G | G | R | R | R | R | R | R | R | R | R | DW | DW | DW | DW | DW | DW | DW | DW |
| 1 + 6 CHANGE | +Y-/Y | +Y-/Y | Y | R | R | R | R | R | R | R | R | R | DW | DW | DW | DW | DW | DW | DW | DW |
| PHASE 2 + 5 | R | R | R | +G-/G | +G-/G | G | R | R | R | R | R | R | DW | DW | DW | DW | DW | DW | DW | DW |
| 5 CHANGE | R | R | R | +Y-/G | +Y-/G | G | R | R | R | R | R | R | DW | DW | DW | DW | DW | DW | DW | DW |
| PHASE 2 + 6 | G | G | G | G | G | G | R | R | R | R | R | R | DW | DW | DW | DW | DW | DW | DW | DW |
| 2 + 6 CHANGE | Y | Y | Y | Y | Y | Y | R | R | R | R | R | R | DW | DW | DW | DW | DW | DW | DW | DW |
| PHASE 2 + 6 ALT | G | G | G | G | G | G | R | R | R | R | R | R | W | W | W | W | DW | DW | DW | DW |
| PED CLEARANCE | G | G | G | G | G | G | R | R | R | R | R | R | FL/DW | FL/DW | FL/DW | FL/DW | DW | DW | DW | DW |
| 2 + 6 ALT CHANGE | Y | Y | Y | Y | Y | Y | R | R | R | R | R | R | DW | DW | DW | DW | DW | DW | DW | DW |
| PHASE 3 + 7 | R | R | R | R | R | R | +G-/R | +G-/R | R | +G-/R | +G-/R | R | DW | DW | DW | DW | DW | DW | DW | DW |
| 3 + 7 CHANGE | 3 + 7 MAY CHANGE TO PHASE 4 + 7, PHASE 3 + 8, OR PHASE 4 + 8 | | | | | | | | | | | | | | | | | | | |
| PHASE 4 + 7 | R | R | R | R | R | R | +G-/G | +G-/G | G | R | R | R | DW | DW | DW | DW | DW | DW | DW | DW |
| 4 + 7 CHANGE | R | R | R | R | R | R | +Y-/Y | +Y-/Y | Y | R | R | R | DW | DW | DW | DW | DW | DW | DW | DW |
| PHASE 3 + 8 | R | R | R | R | R | R | R | R | R | +G-/G | +G-/G | G | DW | DW | DW | DW | DW | DW | DW | DW |
| 3 CHANGE | R | R | R | R | R | R | R | R | R | +Y-/G | +Y-/G | G | DW | DW | DW | DW | DW | DW | DW | DW |
| PHASE 4 + 8 | R | R | R | R | R | R | G | G | G | G | G | G | DW | DW | DW | DW | DW | DW | DW | DW |
| 4 + 8 CHANGE | R | R | R | R | R | R | Y | Y | Y | Y | Y | Y | DW | DW | DW | DW | DW | DW | DW | DW |
| PHASE 4 + 8 ALT | R | R | R | R | R | R | G | G | G | G | G | G | DW | DW | DW | DW | W | W | W | W |
| PED CLEARANCE | R | R | R | R | R | R | G | G | G | G | G | G | DW | DW | DW | DW | FL/DW | FL/DW | FL/DW | FL/DW |
| 4 + 8 ALT CHANGE | R | R | R | R | R | R | Y | Y | Y | Y | Y | Y | DW | DW | DW | DW | DW | DW | DW | DW |
| PRE-EMPTION | +G-/G | +G-/G | G | R | R | R | R | R | R | R | R | R | DW | DW | DW | DW | DW | DW | DW | DW |
| PRE-EMPTION CHANGE | +Y-/Y | +Y-/Y | Y | R | R | R | R | R | R | R | R | R | DW | DW | DW | DW | DW | DW | DW | DW |
| FLASHING OPERATION | FL/Y | FL/Y | FL/Y | FL/Y | FL/Y | FL/Y | FL/R | FL/R | FL/R | FL/R | FL/R | FL/R | DARK | DARK | DARK | DARK | DARK | DARK | DARK | DARK |

WIRING DIAGRAM



SHA STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION

**MD 3 BUSINESS (CRAIN HIGHWAY) AT
MD 648E (BALTIMORE ANNAPOLIS BOULEVARD)
GLEN BURNIE, MARYLAND**

GENERAL INFORMATION SHEET

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|-------------|----------|----------------|-----------------|--------------|-----------|
| SCALE | NONE | DATE | AUGUST 26, 2013 | CONTRACT NO. | XX5295178 |
| DESIGNED BY | NJM | COUNTY | ANNE ARUNDEL | | |
| DRAWN BY | NJM | LOGMILE | 02B00303.34 | | |
| CHECKED BY | BSH | T.I.M.S. NO. | L672 | | |
| F.A.P. NO. | | T.O.D. NO. | | | |
| T.S. NO. | 1508D-GI | SG-04 OF SG-04 | | SHEET NO. | OF |